

WHAT IS CLAIMED IS:

1. A method for assigning IP addresses in an Ethernet passive optical network which includes an OLT (Optical Line Terminal) and a plurality of ONTs (Optical Network
5 Terminals) connected to the OLT, the method comprising the steps of:

including a dynamic host configuration protocol (DHCP) server in the OLT;

establishing IP address pools including at least one IP address according to the
ONTs;

searching for an ONT from a MAC processing section of the OLT by means of a
10 MAC address from which IP address assignment is requested when IP address assignment is requested from one of the ONTs, the ONT being connected to a DHCP client; and

assigning an available IP address existing in an IP address pool established for the
ONT having requested the IP address assignment according to ONTs.

15 2. The method as claimed in claim 1, further comprising a step of transmitting a response signal from the ONT having requested IP address assignment to the DHCP server when the ONT is assigned an IP address from the DHCP server.

3. The method as claimed in claim 1, further comprising a step of rejecting the IP
20 address assignment request in the DHCP server when there is no available IP address in the IP address pool established for the ONT having requested the IP address assignment.

4. The method as claimed in claim 1, further comprising the step of establishing the IP address pools according to a number of subscribers who will be assigned IP addresses.

5 5. The method as claimed in claim 1, further comprising the step of allowing an operator to establish the IP address pools through an operator interface.

6. An OLT (Optical Line Terminal) that is connectable to a plurality of ONTs (Optical Network Terminals) in an Ethernet passive optical network, comprising:

10 a dynamic host configuration protocol (DHCP) server;

a communication interface to the plurality of ONTs; and

a MAC processing section,

wherein the DHCP server is configured to search for an ONT from the MAC processing section using a MAC address from which an IP address assignment is requested

15 when IP address assignment is requested from one of the plurality of ONTs through the communication interface.

7. The OLT as claimed in claim 6, further comprising an operator interface.

20 8. The OLT as claimed in claim 6, wherein the DHCP server includes an IP address pool including at least one IP address according to the plurality ONTs.

9. The OLT as claimed in claim 9, wherein the DHCP server is configured to assign an available IP address existing in the IP address pool established for the ONT having requested the IP address assignment according to ONTs.

10. An Ethernet passive optical network, comprising:
an OLT (Optical Line Terminal) including a dynamic host configuration protocol (DHCP) server in the OLT; and
10 a plurality of ONTs (Optical Network Terminals) connected to the OLT,
wherein the OLT includes means for establishing IP address pools including at least one IP address according to the ONTs, means for searching for an ONT from a MAC processing section of the OLT by means of a MAC address from which IP address assignment is requested when IP address assignment is requested from one of the ONTs, the
15 ONT being connected to a DHCP client, and means for assigning an available IP address existing in an IP address pool established for the ONT having requested the IP address assignment according to ONTs.

11. The network as claimed in claim 10, wherein the OLT further comprises means
20 for transmitting a response signal from the ONT having requested IP address assignment to the DHCP server when the ONT is assigned an IP address from the DHCP server.

12. The network as claimed in claim 10, wherein the OLT further comprises means for rejecting the IP address assignment request in the DHCP server when there is no available IP address in the IP address pool established for the ONT having requested the IP address assignment.